

# Final Report

to

## The Australian Embassy-Beijing

**What?** 88 solar cookers for impoverished rural villagers

**Where?** Dajia Village 大甲村, He'ai Tibetan Autonomous Township 和爱藏族自治乡, Mianning County 冕宁县, Liangshan Yi Autonomous Prefecture 凉山彝族自治州, Sichuan Province 四川省, PR China

**Cost?** 41,400RMB (Australian Embassy = 36,400RMB; Local contribution = 5,000RMB)

**Who?** 88 households (466 villagers)

**Benefits?** Dajia villagers use inefficient, polluting energy sources—animal dung, wood, and coal—for fuel. The implications of such on the health and safety of family members, particularly very young children and women and girls, is so serious that indoor air pollution is now rated by the World Health Organization as the second most dangerous environmental health risk in rural areas (after dirty water and poor sanitation). These solar cookers have lessened this health risk for 466 impoverished villagers and, in addition, have reduced the collection of organic materials, benefitting the local environment. The cookers are now being used to boil (sunlight permitting), five kettles of water a day; it takes twenty minutes to boil a kettle of water. Villagers estimate that they spent, before obtaining the cookers, at least three hours daily collecting fuel, and another hour to build a fire and boil water. Food is also cooked on the cookers. In total, the cookers have much reduced the time villages spend on fuel collection, fire-building, and in smoky kitchens.

*from*

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## PHOTOGRAPHS





Solar cookers in use.



The village leader, Mr. Dong Fei 董飞, instructs villagers on adjusting a cooker.

Fewer of these fuels are now collected and burned in Dajia Village.



**The project manager:** Luodu Gezu 洛都格祖 is from Muer Village 木耳村, Lianhe Township 联合乡, Mianning County, Liangshan Yi Autonomous, Sichuan Province of China. He spent two years in the English Training Program at Qinghai Normal University. He currently is an English major at Northwest Normal University 西北师范大学 in Lanzhou.

**Project goals:** The immediate goal of the project was to provide solar cookers to Dajia Village households. The overarching goal of the project was to decrease women's burden related to fuel collection and increase local people's income, providing more income for sending children to school and, in general, improve living conditions.

**Project beneficiaries:** 88 households (466 villagers) are now directly benefitting from this solar cooker project. I would like to point out the special significance of the recipients: eighty-three recipient households are Namzi and five are Han. The Namzi, though classified as Tibetan, speak a very endangered Qiangic language (currently spoken by 4,000 people only), and have a unique oral history and culture. It is especially significant that the Australian Embassy was able to assist this group of Tibetans (see <http://www.nanzan-u.ac.jp/SHUBUNKEN/publications/afs/pdf/a1605.pdf> for more on the Namzi).

### Aims.

- Buy eighty-eight solar cookers for impoverished Tibetan villagers,
- Increase the number of children attending school (fewer children need to collect fuel; increased income means school fees are more readily met),
- Reduce women and children's work load in gathering fuels,
- Reduce the time of exposure, particularly on the part of women and children, to smoke,
- Less kitchen smoke means homes are cleaner because there is less soot,
- Reduce fuel expenditures--on average each family spends 800-1,500RMB annually on coal and other fuels, and
- Reduce environmental pollution in the village. Every household cook threes times daily and the collective smoke, especially smoke from coal fires, gives people's headaches and people also believe it harms livestock and plants in and near the village.)

### Project Activities

1. On 16 January 2009 I met the villagers (men, women, children), and discussed each person's contribution of labor--unload the cookers from the truck, transport them to the village, set them up for each family, and ensure that they did not damage the cookers.
2. Beginning 16 January I called the solar cooker company director numerous times to ensure the time at which they would transport the cookers to the project location. The leader said to wait because of the Chinese Lunar New Year holiday.
3. On 14 February the company started to transport the solar cookers to Xichang City 西昌市 by train.
4. On 16 February the project manager phoned the villager leader; told him to be ready as on 18 February, the truck would arrive; and asked him to meet with the villagers and reminded them to ready the local contribution and be prepared to do what is mentioned in point 1.
5. On 17 February the solar cookers arrived in Xichang City. I then transported them via truck to a small town, Zhangjiaheba 张家河坝 which is a terminus of transport by vehicle to Dajia Village.
6. On 17 February Ji Wenfu 吉文富 and Dong Fei, who are the leaders of He'ai Tibetan Autonomous

Township, and I collected the local contribution. I then asked about ninety villagers to come to Zhangjiaheba to give instructions on how to use the solar cookers and how to protect the cookers from being damaged.

- On 20 February I started work on the final report.

### Project Finances

Item	Australian Embassy Contribution RMB	Local Contribution RMB	Total Cost RMB
Cookers	34,600	5,000	39,600
Transportation	1,200	0	1,200
Project management expenses	600	0	800
Total	36,400	5,000	41,600

**Explanation for the Budget:** In the original budget, I proposed a cost of 281RMB per cooker. However, in the end I paid a total of 350RMB for each cooker [281RMB (cooker) + 169RMB (transportation cost from Qingdao to Xichang City)].

Receipts: Solar cookers [4 x 9,900RMB = 39,900RMB]



四川省成都市锦江区销售发票

发 票 联 发票代码 151010821502  
发票号码 00630787

客户名称: 洛都格祖 2009年2月14日填制

品名及规格	单位	数量	单价	全 额
太阳能灶	台	22	450	99000.00
				成都市锦江区 建材有限公司 商务专用章
				(大写)玖仟玖佰零捌元零角零分
				销货单位(盖章或批) 开票 卫 收款 卫春刚

四川省鞍山市商业销售发票

发 票 联 发票代码 151340821501  
发票号码 00687651

客户名称: 洛都格祖 2009年2月14日填制

品名及规格	单位	数量	单价	全 额
太阳能灶	台	22	450	99000.00
				成都市锦江区 建材有限公司 商务专用章
				(大写)玖仟玖佰零捌元零角零分
				销货单位(盖章或批) 开票 卫 收款 卫春刚

四川省成都市商业销售发票

发 票 联 税务代码 151010821502  
发票号码 00630776

客户名称：洛都格祖

品名及规格	单位	数量	单价	全 额
				千 百 十 元 角 分
太阳能灶	台	22	450	990.000
				成都中通建 建材有限公司 财务专用章
				2009年2月14日
金额合计 (大写)	玖仟零零零零元零分			
销货单位(盖章有效)	开票人：卫 收款人：卫春刚			

Receipt: Transportation [1,200RMB]

收 据 № 0010379

客户名称：肖云礼 年 月 日

项 目	规 格	计 量 单 位	数 量	单 价	金 额			备 注				
					十	万	千		百	十	元	角
租车费		车	1									
金额合计 (大写)	拾 万 仟 佰 拾 元 角 分 圣											
单位盖章：	负责人：洛都格祖 制单：											

一联存根 另一联交款单位红纸

Receipt: Project management expenses [600 RMB]

This is to certify that I, Luodu Gezu 洛都格祖 (Brady) spent the following sums for managing this project.

No.	2009	Detail	Amount RMB
1	17 February	workers who unloaded solar cookers from the truck in Zhangjiaheba	200
2	17-19 February	2 nights in a hotel in Zhangjiaheba; 50RMB per night	100
3	20 February	1 night in Mianning County town	50
4	17-20 February	3 days food @ 40 RMB per day	120
5	20 February	Bus: Zhangjiaheba to Mianning County town	50
6	21 February	Bus: Mianning County town to Moufangou	40
7	7-21February	Phone fee	40
			600

Luodu Gezu 洛都格祖 (Brady)

2 April 2009

## Recipients

### 冕宁县和爱藏族乡“太阳灶”分发名册

户主姓名	家庭住址	民族
宋开科	和爱乡庙顶村2组1号	汉族
宋启德	和爱乡庙顶村2组2号	汉族
吴从德	和爱乡庙顶村2组9号	汉族
王明刚	和爱乡庙顶村2组11号	藏族
王成方	和爱乡庙顶村1组17号	藏族
王成先	和爱乡庙顶村1组18号	藏族
王海军	和爱乡庙顶村1组19号	藏族
王海才	和爱乡庙顶村1组20号	藏族
王海华	和爱乡庙顶村1组21号	藏族
伍鹏懿	和爱乡庙顶村2组12号	藏族
伍兴志	和爱乡庙顶村2组14号	藏族
伍兴祥	和爱乡庙顶村3组1号	藏族
唐三模	和爱乡庙顶村3组2号	藏族
伍成绩	和爱乡庙顶村2组5号	藏族
毛云升	和爱乡庙顶村2组6号	汉族
吴茂友	和爱乡庙顶村2组7号	汉族
伍万清	和爱乡庙顶村4组33号	藏族
伍润清	和爱乡庙顶村4组34号	藏族
伍万法	和爱乡庙顶村4组35号	藏族
伍小华	和爱乡拉姑萨村3组16号	藏族
马成华	和爱乡拉姑萨村1组17号	藏族
王文德	和爱乡拉姑萨村3组10号	藏族
伍金祥	和爱乡拉姑萨村3组11号	藏族
王德春	和爱乡拉姑萨村2组21号	藏族
唐文才	和爱乡拉姑萨村5组6号	藏族
张婉鸣	和爱乡拉姑萨村5组7号	藏族
张兴志	和爱乡拉姑萨村5组26号	藏族
王永发	和爱乡拉姑萨村2组9号	藏族
吴应芬	和爱乡拉姑萨村2组12号	藏族
唐文学	和爱乡拉姑萨村2组13号	藏族
唐文贵	和爱乡拉姑萨村2组14号	藏族

户主姓名	家庭住址	民族
宋启发	和爱乡庙顶村 1组25号	汉族
代西元	和爱乡庙顶村 1组28号	汉族
唐文秀	和爱乡庙顶村 4组21号	藏族
伍小祥	和爱乡庙顶村 4组23号	藏族
王德洪	和爱乡庙顶村 4组25号	藏族
伍德发	和爱乡庙顶村 4组13号	藏族
伍玉发	和爱乡庙顶村 4组14号	藏族
伍国祥	和爱乡庙顶村 4组15号	藏族
杨明芬	和爱乡庙顶村 4组16号	藏族
伍板地	和爱乡庙顶村 4组17号	藏族
王文祥	和爱乡庙顶村 4组18号	藏族
伍德祥	和爱乡庙顶村 4组26号	藏族
杨云富	和爱乡庙顶村 4组27号	藏族
赵友芬	和爱乡庙顶村 4组29号	藏族
王学全	和爱乡庙顶村 4组30号	藏族
代西胜	和爱乡庙顶村 1组1号	汉族
伍兴荣	和爱乡庙顶村 1组2号	藏族
王海祥	和爱乡庙顶村 1组3号	藏族
王建华	和爱乡庙顶村 1组6号	藏族
王海兵	和爱乡庙顶村 1组7号	藏族
伍成德	和爱乡庙顶村 1组13号	藏族
伍成国	和爱乡庙顶村 1组14号	藏族
王成远	和爱乡庙顶村 1组15号	藏族
王力发	和爱乡庙顶村 1组26号	藏族
伍德元	和爱乡庙顶村 1组8号	藏族
伍德刚	和爱乡庙顶村 1组9号	藏族
王成忠	和爱乡庙顶村 1组16号	藏族
王润润	和爱乡庙顶村 1组22号	藏族
王建平	和爱乡庙顶村 1组23号	藏族
吴应明	和爱乡庙顶村 1组24号	汉族
王国才	和爱乡庙顶村 1组11号	藏族

户主姓名	家庭住址	民族
赵友祥	和爱乡拉菇萨村 2组15号	藏族
伍明会	和爱乡拉菇萨村 2组16号	藏族
唐文芬	和爱乡拉菇萨村 2组17号	藏族
马成珍	和爱乡拉菇萨村 2组18号	藏族
张兴珍	和爱乡拉菇萨村 3组2号	藏族
伍长明	和爱乡拉菇萨村 1组5号	藏族
伍拉聪	和爱乡拉菇萨村 1组7号	藏族
唐文虎	和爱乡拉菇萨村 1组3号	藏族
王文学	和爱乡拉菇萨村 1组4号	藏族
伍金林	和爱乡拉菇萨村 1组18号	藏族
· 马德祥	和爱乡拉菇萨村 1组16号	藏族
陈力祥	和爱乡拉菇萨村 2组2号	藏族
赵友富	和爱乡拉菇萨村 2组4号	藏族
赵友先	和爱乡拉菇萨村 2组6号	藏族
王兴芬	和爱乡拉菇萨村 1组9号	藏族
伍三莫	和爱乡拉菇萨村 1组11号	藏族
张正荣	和爱乡拉菇萨村 1组13号	藏族
赵友芬	和爱乡拉菇萨村 3组5号	藏族
张培丰	和爱乡拉菇萨村 3组7号	藏族
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唐永芳	和爱乡拉菇萨村 3组3号	藏族
陈万春	和爱乡拉菇萨村 3组19号	藏族
张应发	和爱乡拉菇萨村 5组21号	藏族



## **Delays**

When I received the funds, the solar cooker factory was on holiday and thus I had to wait for about twenty-five days.

**Difficulties:** I planned to purchase 142 solar cookers for 142 households, but due to lack of money (explained in 'Finances') only eighty-eight households were able to receive solar cookers. The households that did not receive cookers expressed their hope to also receive cookers.

## **Lessons learned**

- Have a good relationship with villagers and the villager leaders to ensure active involvement and the ultimate success of the project.
- Verify, to the extent possible, actual prices. In this project, village families who did not receive cookers were disappointed that they did not receive cookers.

## 感谢信

敬爱的澳大利亚驻北京大使馆：

您好！

首先请允许我代表四川省冕宁县和爱藏族乡人民政府全体成员，以及和爱藏族乡 88 户免费得到太阳灶的困难家庭，对你们的资助表示深深地感谢。感谢你们不远万里寄来的温暖和关爱。

今年年初，你们捐赠给我乡贫困村民的 88 台聚光型太阳灶已全部安装完备，并已迅速投入使用，收效良好，得到了我乡广大村民的一致好评和认同。

和爱藏族乡位于四川省冕宁县西部，地处雅砻江拐角处，东至雅砻江，西北与甘孜州九龙县隔江相望。全乡辖 6 个行政村，27 个村民小组，居住有藏、彝、汉共 800 余户村民，其中藏族约占总人口的 27%，是凉山州唯一一个藏族乡镇。

辖区面积 96 平方公里，海拔 2086 米，整个区域“上齐牦牛山，下至金河边”，山高坡陡，悬崖四壁，峡谷纵横，自然条件恶劣。由于交通的制约，生产极为单一、经济十分落后、是一个实实在在的边远山区。

“靠山则吃山”，据初步调查，我乡一个普通的农村家庭，一年炊事用柴就可达七八千斤，虽山林广阔，但乱砍滥伐现象仍然存在，且不说耗费巨大的劳动力，也同时给我乡每年的护林防汛工作带了巨大难度，每年雨季仍有不同程度的泥石流频发。

这些年，我乡党委政府也就能源的问题上进行反复探讨、实践，但也常常因为资金问题而有所阻滞。

今年初，接到冕宁县锦屏中心乡的通知，得知贵单位欲捐赠 88 台聚光型太阳灶给我乡贫困藏民，这让我们喜出望外，也给我乡的能源探索带来新的课题和希望。

接到通知后，我乡迅速确定了太阳灶的分发名单，集中在海拔较高的庙顶及拉菇萨两村藏民中发送。后又派专人负责分发和具体教授安装及使用知识。

我乡虽是山区，但因海拔高，全年日照时间长，太阳资源丰富，而太阳灶正是利用太阳能辐射，通过聚光获取热量，无需燃料，也没有任何污染，其速度比蜂窝煤炉还要快，甚至可与煤气灶相媲美。

所以，太阳灶在我乡具有极大的实用价值，它不仅给村民日常的生活带来了便利，节省了劳动力，同时，也极大地减少了能源消耗，为我乡有效开展护林工作奠定了基础。

为此，我们写了这封信，表达我们万分的感激和谢意！我们有理由相信，在你们的帮助和引导下，我乡的新能源探索定会有一个美好的前景；我们也会深深记住这份来自海外的情意，同时，真切祝愿两国人民友谊地久天长。

此致

敬礼！

四川省冕宁县和爱藏族乡人民政府

二〇〇九年三月二十二日

# 简报

第四期

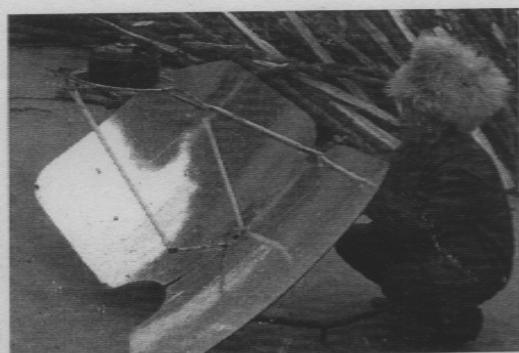
四川省冕宁县和爱藏族乡人民政府      二〇〇九年三月十五日

## 节能减排，少污染 藏乡喜迎“太阳灶”

春天来了，花儿开了，树绿了，阳光也褪去一冬的寒意，唤醒了大山，也唤醒了大山中勤劳的藏族人民。

不过，藏乡的这个清晨和以往似乎有些不同，代替了村庄袅袅炊烟的，是房前屋后晒场上一个个亮闪闪的“蝴蝶”形状的太阳灶。

这是澳大利亚驻北京大使馆在这个春天给冕宁县和爱藏族乡送来的一份厚礼。



藏民用上太阳灶

走访过程中，太阳灶在使用上的方便和快捷得到了大家的认同和一致好评。许多没有得到太阳灶的农户也表现出极大的兴趣。

陈庆林表示，太阳灶只通过聚光获取热量，就能烹煮食物，不烧任何燃料，省电、省煤、省柴，又没有任何污染，不仅大大减轻了农民的负担，而且对我乡的封山育林及护林工作也能起到很好的推动和促进作用，是今后能源发展的必然趋势。

## ORIGINAL PROPOSAL

### **Questionnaire for applying for funds for small scale projects at the Australia Embassy Beijing.**

#### **1. SUMMARY OF PROJECT**

Each village household will receive a solar cooker thereby increasing family income by allowing more time to be spent on farming and decreasing the amount of money spent on coal.

#### **2. LOCALITY OF THE PROJECT**

Dajia Village is located in Huo'ai Tibetan Autonomous Township, Mianning County, Liangshan Yi Autonomous Prefecture, Sichuan Province, China. The village has 142 households with 753 people. All residents are farmers.

**AGRICULTURE:** Dajia Tibetan Village is situated in the east of Huo'ai Tibetan Autonomous Township, Mianning County, Liangshan Yi Autonomous Prefecture, Sichuan Province, China. It is approximately 600 kilometers from Chengdu City, the capital city of Sichuan Province. Huo'ai is the only Tibetan township in Mianning County. Nearly all 753 Dajia villagers (142 households) are Tibetan and live in one-storied stone houses made of stone. The village is near the Yalong River 雅砻江. The mountains beside the village are covered with trees; the government bans cutting trees.

The village has 1,270 *mu* 亩 of cultivated land that cannot be irrigated. The main crop is corn, and people sell it for cash income and also trade corn for rice. Other crops include potatoes, buckwheat, and beans. Difficulties people face with farming include:

- 800 *mu* of land is two kilometers from the villagers' homes
- drought is common and sometimes hail destroys crops.
- transportation is very poor--only horses and donkeys can be used when transporting crops to their homes

In addition to farming, each family has few livestock. In total, the village has:

- 90 sheep
- 320 goats
- 46 horses
- 32 donkeys

The livestock are herded on mountains beside the Yonglong River.

Average annual cash income per person is approximately 900RMB per mouth. People earn cash by:

- selling goats, sheep, goat wool, and sheep hair
- selling grain
- young adults work outside the local area at menial factory work and on construction sites. Except for the Chinese New Year, they do not stop working. They see their families only once a year.

#### **3. STATE THE PROBLEM**

Collecting fuels is extremely difficult work in this village and is culturally defined as the responsibility of women and children. Since it is time consuming it prevents women from doing such

other work as fetching water, doing housework, and it also prevents children from spending much time on study. Impoverished households find it very difficult to purchase coal, one ton of which costs nearly 400RMB. An ordinary family easily can burn two tons yearly at a cost of 800RMB.

People at times are injured, and a few have even died from cutting tools, while gathering firewood in mountains. Collecting an adequate amount of fuel is a serious problem and villagers spend much time collecting it consequently, they cannot spend much time taking care of their land and this results in less food being produced. Furthermore, women and children have respiratory problems from spending much time in smoky kitchens.

#### 4. STATE THE PROPOSED SOLUTION

- The project will reduce the burden assigned to women and children; more importantly children can spend much time on their study.
- Reduce expenses on coal
- Reduce injuries caused during collecting fuel
- Reduce deforestation and soil erosion
- Improve women and children's health

#### 5. WHO WILL UNDERTAKE THE PROJECT?

Luode Gezu (Brady) is a native of the village and, at the time of this writing, an English major at Qinghai Normal University. Ji Wenfu is the He'ai Township leader, who will help me finish the project. If funded, Luodu Gezu and Mr. Ji will undertake the project.

#### 6. WHO WILL BENEFIT FROM THE PROJECT?

142 Tibetan families and 753 village residents in Dajia Tibetan village will benefit.

#### 7. THE TOTAL COST OF THE PROJECT AND THE TOTAL FUNDING SOUGHT FROM THE DAP

Each solar cooker costs 281RMB, thus 142 solar cookers will cost 39,902 RMB, which includes transportation.

Applicant's expense:	1,500RMB
Total costs:	41,402RMB
Donor contribution:	36,402RMB
Local government contribution =	5,000RMB